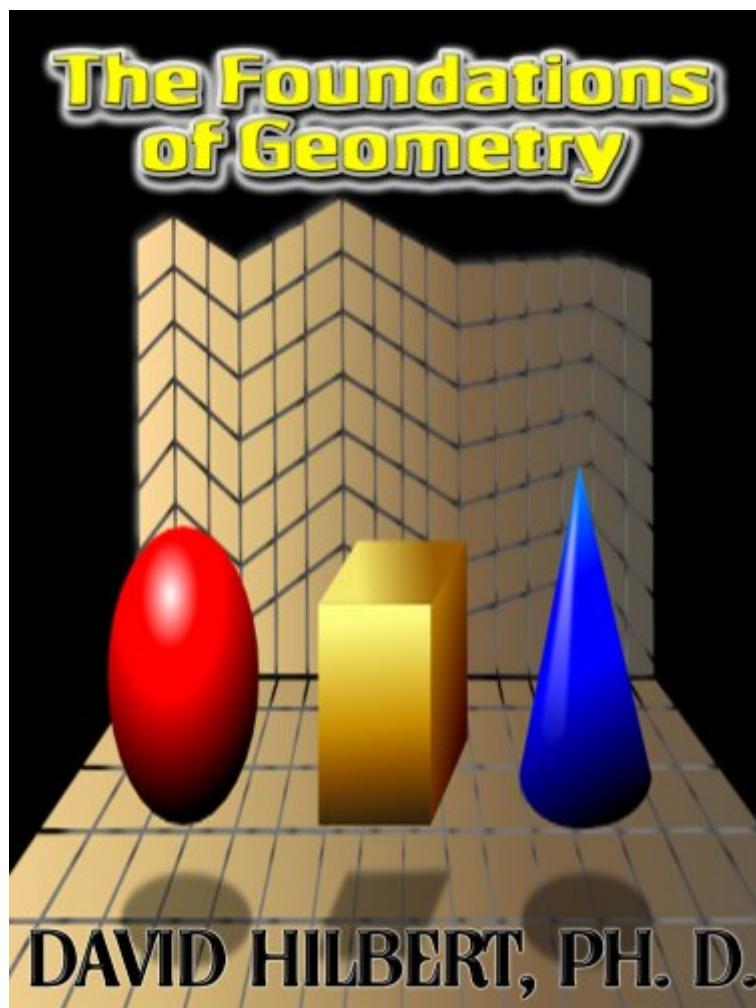


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The Foundations Of Geometry (Illustrated)



Synopsis

The Foundations of GeometryGeometry, like arithmetic, requires for its logical development only a small number of simple, fundamental principles. These fundamental principles are called the axioms of geometry. The choice of the axioms and the investigation of their relations to one another is a problem which, since the time of Euclid, has been discussed in numerous excellent memoirs to be found in the mathematical literature. This problem is tantamount to the logical analysis of our intuition of space. The following investigation is a new attempt to choose for geometry a simple and complete set of independent axioms and to deduce from these the most important geometrical theorems in such a manner as to bring out as clearly as possible the significance of the different groups of axioms and the scope of the conclusions to be derived from the individual axioms.

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CHAPTER III. THE THEORY OF PROPORTION. 13. Complex number-systems 14. Demonstration of Pascal's theorem 15. An algebra of segments, based upon Pascal's theorem 16. Proportion and the theorems of similitude 17. Equations of straight lines and of planes

CHAPTER IV. THE THEORY OF PLANE AREAS. 18. Equal area and equal content of polygons 19. Parallelograms and triangles having equal bases and equal altitudes 20. The measure of area of triangles and polygons 21. Equality of content and the measure of area

CHAPTER V. DESARGUES'S THEOREM. 22. Desargues's theorem and its demonstration for plane geometry by aid of the axioms of congruence. 23. The impossibility of demonstrating Desargues's theorem for the plane without the help of the axioms of congruence. 24. Introduction of an algebra of segments based upon Desargues's theorem and independent of the axioms of congruence. 25. The commutative and the associative law of addition for our new algebra of segments. 26. The associative law of multiplication and the two distributive laws for the new algebra of segments. 27. Equation of the straight line, based upon the new algebra of segments 28. The totality of segments, regarded as a complex number system 29. Construction of a geometry of space by aid of a desarguesian number system. 30. Significance of Desargues's theorem

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THEOREM. 31. Two theorems concerning the possibility of proving Pascal's theorem 32. The commutative law of multiplication for an archimedean number system. 33. The commutative law of multiplication for a non-archimedean number system . 34. Proof of the two propositions concerning Pascal's theorem Non-pascalian geometry. 35. The demonstration, by means of the theorems of Pascal and Desargues, of any theorem relating to points of intersection.

CHAPTER VII. GEOMETRICAL CONSTRUCTIONS BASED UPON THE AXIOMS I-IV. 36. Geometrical constructions by means of a straight-edge and a transferor of segments.37. Analytical representation of the co-ordinates of points which can be so constructed.

Book Information

File Size: 1133 KB

Print Length: 144 pages

Simultaneous Device Usage: Unlimited

Publisher: HILBERT (April 18, 2013)

Publication Date: April 18, 2013

Language: English

ASIN: B00CFRGLV8

Text-to-Speech: Enabled

X-Ray: Not Enabled

Word Wise: Not Enabled

Lending: Not Enabled

Enhanced Typesetting: Not Enabled

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Customer Reviews

This is a book for a person who wants to know the real proofs of the things they are teaching in high school geometry. You could teach yourself many of these proofs and it also offers great references which one could find in case of any confusion.

was very prompt in getting me my book and was very generous when it is due back. used to only

rent from chegg but switching now.

When I read about the intended audience of this book, I thought that maybe I had made a mistake. Then again, this book is about fifty years old. So maybe the intended audience was a lot smarter back then. This book has proofs that are more or less easy to follow. The proofs are very precise, maybe overly so. On the whole, the book is a good introduction to geometry. What this book is not is a complete book on Geometry. The section on Euclidean geometry stops at Circles, for example.

The FORGOTTEN BOOKS edition of Hilbert's Foundations of Geometry isn't Hilbert's Geometry. Notice the number of pages (which I didn't when ordering it). This publication contains ONLY the diagrams in large format (with a very few absent) from the text of Hilbert's Geometry. There is no title page or author listed, but this is in fact what the content is from. It is clearly a scan from an old book, so there must be some historical context for it. Maybe someone can clarify the mystery. I give it 5 stars because these comments will probably show up among the reviews of Hilbert's full text and I don't want to skew the star rating of the book, but this particular reprint I don't find of any actual value, except that it's from Hilbert and there may be some interesting reason why it occurs as an independent publication. Along with this reprint, I also ordered the FB Classic Reprint of "Elements of Geometry and Trigonometry" by Charles Davies. These two books are the first reprints I've purchased from any of the reprint publishers selling on . For more on the quality of Forgotten Books reprints, see my review of Davies' book. The mysterious Hilbert-diagrams text they sell under the title of Hilbert's Foundations of Geometry is, I suspect, an anomaly. Besides, their honest page-count should raise questions about the content. Now you know what that content is.

It would be great if could provide a, "Look Inside," this book to see what it covers and how it covers it. Thanks.

I used the first edition of this book in my Senior level geometry class. It was a very enjoyable book for me. There was a lot of commentary about the history of the subject and concepts pertaining to geometry before it got into the theorem proof section. I really enjoyed the exploration of triangles and circles.

This is the first book ever to present the axiomatic foundations of Euclidean geometry. The first edition appeared in the nineties of the nineteenth century. Most of the book can be read and

appreciated by someone who is mature in elementary euclidean geometry (in fact the material was originally conceived to be used in a summer school for mathematics teachers in Germany). If you expect to find a treatment that will fill up all the gaps in the elementary books you will be disappointed, it does not. If you are looking for a text that does fill all the gaps try to get a copy Forders' bookÂ The foundations of Euclidean geometry,. This edition is not based on the last German edition that is available and does not contain the appendices by Hilbert and the supplements by Paul Bernays, so as a text on the foundations of euclidean geometry it is not useless but it is surely crippled. I do not dare to give a book with Hilberts name on it less than five stars.

I hate giving a poor review to a book with Hilbert's name on it. However, this edition is a poorly scanned copy. I'm glad that someone took the time to create a Kindle version, and the price is right. Just be warned in advance that you will have trouble reading this. Check out Gutenberg for the free PDF.

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